

Available Nutrients and Value for Manure From Various Livestock Types

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Factsheet

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The nutrients from manure have a nutrient and economic value. The tables that follow give an indication of the available nitrogen, phosphorus and potassium from various livestock types. The information is based on the most current databank of nutrients and makes a few assumptions. All information in the tables is presented in an "as-is basis," — in other words, the nutrients as applied at the listed dry matter content.

The useable nitrogen is the amount of nitrogen available in the year of application, assuming the manure is spring applied and incorporated within 24 hr. A simplified, quick-estimate method for calculating nitrogen available for fall applications would be:

- **Metric:** Multiply half the % total nitrogen by 10 to calculate kg/1,000 L (same as kg/m³) or kg/tonne. The actual value will vary (especially for liquid manure) with late summer application (lower availability) versus late fall application (higher availability). The amount of phosphorus and potash does not vary with season of application. In the year of application, 40% of the phosphorus in manure is available; another 40% is available in subsequent years.

Imperial: Multiply half the % total nitrogen by 100 for liquid manure or 20 for solid manure. The actual value will vary (especially for liquid manure) with late summer application (lower availability) versus late fall application (higher availability). The amount of phosphorus and potash does not vary with season of application. In the year of application, 40% of the phosphorus in manure is available; another 40% is available in subsequent years.

The actual immediate nutrient value for crop production will be less than what is reflected in the tables if the nutrients being applied are not required for the production of the crop. An example of this would be the nitrogen from manure applied to a legume crop, or the phosphorus and/or potassium applied to a field with a soil test higher than 60 mg/L (ppm) or 250 mg/L (ppm) for P and K, respectively.

Some nitrogen is available in subsequent years; the amount is higher for solid manure than for liquid manure. The value of that nitrogen for the 3 years is reflected in the column that reads "Year 2-4 value," which also reflects the remaining half of the total available phosphorus value.

The values in these tables were compiled by OMAFRA, with aggregate sample data provided by A&L Labs, Agri-Food Labs, Stratford Agri-Analysis and the University of Guelph Analytical Lab, and summarize the information found in the NMAN software.

Table 1a. Liquid Manure — Available Nutrients and Value for Manure from Various Livestock Types — Metric

Animal Type	DM Range	Available Nutrients (in year of application)				Value		Total Nutrient Content (as-is basis)					# Samples
		Aver DM	Usable N ¹	P ₂ O ₅	K ₂ O	Year 1 value ²	Year 2-4 value	Total N	NH ₄ -N		P	K	
		%	kg/1,000 L			\$/1,000 L		%	mg/L	%	%	%	
Hog	average	3.7	2.7	1.2	1.9	8.50	2.90	0.40	2,679	0.27	0.13	0.18	1,160
	10%–18%	12.7	4.9	3.5	3.3	18.40	8.45	0.79	4,747	0.47	0.38	0.31	45
	6%–10%	7.5	4.1	2.3	2.8	14.00	5.70	0.65	3,977	0.40	0.25	0.26	161
	4%–6%	4.9	3.3	1.6	2.4	10.80	3.90	0.51	3,262	0.33	0.17	0.22	195
	2%–4%	2.9	2.5	1.0	1.7	7.70	2.50	0.37	2,544	0.25	0.11	0.16	387
	0%–2%	1.3	1.6	0.5	1.2	4.60	1.10	0.22	1,691	0.17	0.05	0.11	373
	finisher	7.6	4.4	2.1	3.2	14.50	5.10	0.64	4,465	0.45	0.23	0.30	57
	weaners	3.0	2.3	1.3	1.7	8.00	3.10	0.33	2,316	0.23	0.14	0.16	25
	SEW	2.2	1.7	0.6	1.4	5.15	1.40	0.26	1,669	0.17	0.06	0.13	15
	dry sows	1.9	2.2	0.9	1.2	6.40	2.10	0.27	2,313	0.23	0.10	0.11	26
Dairy	average	8.4	1.8	0.8	2.6	7.10	2.20	0.35	1,524	0.15	0.08	0.24	948
	10%–18%	13.7	2.2	1.3	3.4	9.70	3.50	0.49	1,797	0.18	0.14	0.32	264
	8%–10%	9.0	1.9	0.7	2.6	7.10	2.10	0.38	1,620	0.16	0.08	0.24	222
	6%–8%	7.0	1.8	0.7	2.5	6.80	1.85	0.33	1,628	0.16	0.07	0.23	196
	2%–6%	4.4	1.3	0.5	2.0	5.20	1.40	0.24	1,228	0.12	0.05	0.19	212
	0%–2%	1.0	0.6	0.2	1.2	2.50	0.45	0.09	582	0.06	0.02	0.11	54
Beef	average	7.9	1.6	0.7	2.3	6.40	2.00	0.31	1,329	0.13	0.08	0.22	85
	10%–18%	14.5	2.2	1.2	3.6	9.70	3.40	0.48	1,714	0.17	0.13	0.33	28
	6%–10%	7.8	1.7	0.7	2.2	6.40	2.00	0.33	1,456	0.15	0.08	0.20	16
	2%–6%	3.8	1.2	0.5	1.6	4.50	1.20	0.21	1,178	0.12	0.05	0.15	27
	0%–2%	1.2	0.5	0.1	1.1	2.30	0.40	0.09	476	0.05	0.02	0.10	11
Poultry	average	10.5	5.8	2.8	3.2	17.95	6.70	0.82	5,570	0.56	0.30	0.30	137
	10%–18%	13.8	6.6	3.5	3.7	21.10	8.50	0.95	6,203	0.62	0.38	0.34	76
	6%–10%	8.2	5.8	2.5	3.1	17.10	6.00	0.8	5,608	0.56	0.27	0.29	36
	2%–6%	4.2	3.7	1.0	2.3	10.10	2.60	0.49	3,701	0.37	0.11	0.21	24
	pullets	16.3	7.1	4.0	3.8	23.00	9.80	1.09	6,320	0.63	0.43	0.35	10
	layers	10.9	5.7	2.7	3.0	17.50	6.70	0.81	5,440	0.54	0.30	0.28	55
Runoff		0.7	0.32	0.1	0.9	1.70	0.30	0.05	310	0.031	0.01	0.09	49
Milk-fed veal		1.5	0.55	0.2	1.9	3.40	0.50	0.08	553	0.06	0.02	0.18	3
Biosolids	aerobic	2.0	0.43	0.6	0.0	1.80	1.50	0.12	109	0.01	0.06	0	10
	anaerobic	4.4	1.31	1.3	0.0	4.70	3.30	0.28	776	0.08	0.14	0	39

¹ Useable N = amount of Nitrogen available in the year of application assuming spring application incorporated within 24 hr. A simplified useable N for fall-applied manure = $[(\% \text{ total N} \times 0.5) \times 10]$ for liquid manure.

² Value of manure is based on purchase price of an equivalent amount of mineral fertilizer:
 $(\text{N} - \text{P}_2\text{O}_5 - \text{K}_2\text{O} = 1.43 - 2.20 - 1.10 \text{ \$/kg})$. The actual immediate value for crop production will be less if all the nutrients applied are not required for growing the crop.

The manure value is based on the purchase price of an equivalent amount of mineral fertilizer (Jun 08). The micronutrient and organic matter values are not reflected in these tables.

Table 1b. Liquid Manure — Available Nutrients and Value for Manure from Various Livestock Types — Imperial

Animal Type	DM Range	Available Nutrients (in year of application)				Value		Total Nutrient Content (as-is basis)					# Samples
		Aver DM	Usable N ¹	P ₂ O ₅	K ₂ O	Year 1 value ²	Year 2-4 value	Total N	NH ₄ -N		P	K	
		%	lb/1,000 gallons			\$/1,000 gal		%	ppm	%	%	%	
Hog	average	3.7	26.8	11.8	19.0	38.70	13.25	0.40	2,679	0.27	0.13	0.18	1,160
	10%–18%	12.7	49.0	35.0	33.5	83.60	38.40	0.79	4,747	0.47	0.38	0.31	45
	6%–10%	7.5	40.8	23.0	28.1	63.60	25.80	0.65	3,977	0.40	0.25	0.26	161
	4%–6%	4.9	33.0	15.6	23.8	49.00	17.70	0.51	3,262	0.33	0.17	0.22	195
	2%–4%	2.9	25.2	10.1	17.3	35.15	11.40	0.37	2,544	0.25	0.11	0.16	387
	0%–2%	1.3	16.2	4.6	11.9	21.10	5.15	0.22	1,691	0.17	0.05	0.11	373
	finisher	7.6	44.1	21.2	32.4	66.00	23.30	0.64	4,465	0.45	0.23	0.30	57
	weaners	3.0	22.8	12.9	17.3	36.35	14.00	0.33	2,316	0.23	0.14	0.16	25
	SEW	2.2	16.9	5.5	14.0	23.50	6.55	0.26	1,669	0.17	0.06	0.13	15
	dry sows	1.9	21.6	9.2	11.9	29.20	9.60	0.27	2,313	0.23	0.10	0.11	26
Dairy	average	8.4	17.7	7.7	26.0	32.25	9.90	0.35	1,524	0.15	0.08	0.24	948
	10%–18%	13.7	22.4	12.5	34.2	44.20	15.90	0.49	1,797	0.18	0.14	0.32	264
	8%–10%	9.0	18.9	7.2	25.8	32.40	9.60	0.38	1,620	0.16	0.08	0.24	222
	6%–8%	7.0	18.0	6.6	25.3	31.00	8.50	0.33	1,628	0.16	0.07	0.23	196
	2%–6%	4.4	13.4	5.0	20.2	23.75	6.25	0.24	1,228	0.12	0.05	0.19	212
	0%–2%	1.0	5.9	1.7	11.9	11.45	2.00	0.09	582	0.06	0.02	0.11	54
Beef	average	7.9	15.5	7.3	23.4	29.05	9.20	0.31	1,329	0.13	0.08	0.22	85
	10%–18%	14.5	21.6	12.1	35.9	44.10	15.55	0.48	1,714	0.17	0.13	0.33	28
	6%–10%	7.8	16.8	7.2	21.7	28.95	9.20	0.33	1,456	0.15	0.08	0.20	16
	2%–6%	3.8	12.4	4.5	16.0	20.60	5.50	0.21	1,178	0.12	0.05	0.15	27
	0%–2%	1.2	5.2	1.5	11.0	10.35	2.00	0.09	476	0.05	0.02	0.10	11
Poultry	average	10.5	58.0	27.7	32.4	81.60	30.60	0.82	5,570	0.56	0.30	0.30	137
	10%–18%	13.8	65.7	34.9	36.6	95.90	38.50	0.95	6,203	0.62	0.38	0.34	76
	6%–10%	8.2	57.6	24.6	31.1	77.60	27.20	0.80	5,608	0.56	0.27	0.29	36
	2%–6%	4.2	36.9	10.5	22.7	45.80	11.80	0.49	3,701	0.37	0.11	0.21	24
	pullets	16.3	70.6	39.6	37.8	104.35	44.60	1.09	6,320	0.63	0.43	0.35	10
	layers	10.9	56.9	27.4	30.3	79.60	30.35	0.81	5,440	0.54	0.30	0.28	55
Runoff		0.7	3.2	1.0	9.2	7.65	1.20	0.05	310	0.03	0.01	0.09	49
Milk-fed veal		1.5	5.5	2.1	19.4	15.40	2.40	0.08	553	0.06	0.02	0.18	3
Biosolids	aerobic	2.0	4.3	5.5	0	9.70	6.30	0.12	109	0.01	0.06	0	10
	anaerobic	4.4	13.1	12.9	0	21.35	15.10	0.28	776	0.08	0.14	0	39

¹ Useable N = amount of nitrogen available in the year of application assuming spring application incorporated within 24 hr. A simplified useable N for **fall-applied** manure = [(% total N x 0.5) x 100] for liquid manure.

² Value of manure is based on purchase price of an equivalent amount of mineral fertilizer: (N – P₂O₅ – K₂O = 0.65 – 1.00 – 0.50 \$/lb). The actual immediate value for crop production will be less if all the nutrients applied are not required for growing the crop.

The manure value is based on the purchase price of an equivalent amount of mineral fertilizer (Jun 2008). The micronutrient and organic matter values are not reflected in these tables.

Table 2a. Solid Manure — Available Nutrients and Value for Manure from Various Livestock Types — Metric

Animal Type	DM Range	Available Nutrients (in year of application)				Value		Total Nutrient Content (as-is basis)					# Samples
		Aver DM	Usable N ¹	P ₂ O ₅	K ₂ O	Year 1 value ²	Year 2–4 value	Total N	NH4-N	P	K		
		%	kg/tonne		\$/tonne		%	mg/L	%	%	%		
Hog	average	30.2	4.0	4.3	6.0	21.70	10.90	0.90	2,702	0.27	0.46	0.56	61
Dairy	average	25.0	1.8	1.5	5.3	11.70	4.50	0.59	1,221	0.12	0.17	0.49	174
	30% +	38.9	1.6	1.6	5.7	11.95	4.80	0.65	796	0.08	0.17	0.53	36
	18%–30%	21.3	1.9	1.5	5.1	11.60	4.40	0.57	1,331	0.13	0.16	0.48	138
Beef	average	28.4	1.9	2.2	6.1	14.15	6.30	0.74	1,028	0.10	0.24	0.57	184
	30% +	38.1	2.1	3.5	7.9	19.40	9.70	0.95	951	0.10	0.38	0.74	62
	18%–30%	23.5	1.7	1.5	5.2	11.50	4.60	0.63	1,067	0.11	0.16	0.48	122
Sheep	average	33.8	2.9	2.6	8.4	19.10	7.10	0.80	2,299	0.23	0.28	0.78	57
Dairy goats	average	35.2	3.8	2.6	11.1	23.30	7.60	1.07	2,865	0.29	0.28	1.03	41
Composted cattle		38.3	1.7	2.6	11.9	11.90	21.15	0.86	543	0.05	0.28	1.10	29
Compost: all types		38.9	2.0	4.1	8.9	8.90	21.75	0.84	1,035	0.10	0.45	0.82	63
Grain-fed veal	average	28.8	2.2	1.7	5.1	12.40	5.30	0.79	1,328	0.13	0.18	0.47	18
Horses	average	37.4	1.3	1.4	4.6	10.10	4.10	0.50	749	0.07	0.15	0.43	41
	>50%	63.0	0.9	1.9	9.6	16.05	6.05	0.80	591	0.06	0.21	0.89	4
	<50%	34.6	1.3	1.3	4.1	9.30	3.90	0.47	769	0.08	0.15	0.38	37
Poultry	average	55.3	10.6	11.0	13.4	54.10	28.95	2.45	5,339	0.53	1.20	1.24	809
	80% +	85.1	11.4	15.5	18.8	71.10	41.90	3.36	2,129	0.21	1.69	1.74	59
	60%–80%	71.0	11.9	13.0	16.7	64.00	34.65	3.00	4,868	0.49	1.41	1.55	358
	40%–60%	50.0	9.8	11.4	13.4	53.90	29.30	2.25	5,144	0.51	1.24	1.24	146
	18%–40%	28.5	8.8	6.8	7.1	35.45	17.05	1.55	6,976	0.70	0.74	0.66	246
	layers	34.2	10.5	8.2	8.7	42.45	20.70	1.93	7,810	0.78	0.89	0.80	161
	pullets	47.9	13.8	12.5	14.6	63.20	33.40	3.14	7,236	0.72	1.36	1.35	50
	broilers	68.5	11.9	12.2	16.4	62.00	33.40	3.09	4,364	0.44	1.33	1.52	48
	broiler breeder growers	63.6	7.5	13.1	14.1	55.10	32.70	1.92	2,965	0.30	1.42	1.31	24
	broiler breeder layers	65.1	8.5	14.5	16.8	62.70	36.60	2.21	3,175	0.32	1.58	1.56	74
Turkeys		50.6	13.0	12.9	15.7	64.20	33.00	2.74	8,038	0.80	1.40	1.45	61
Biosolids	dewatered	32.1	13.3	12.1	1.2	46.90	34.80	3.76	3,443	0.34	1.31	0.11	89

¹ Useable N = amount of nitrogen available in the year of application assuming spring application incorporated within 24 hr. A simplified useable N for **fall-applied** manure = [(% total N x 0.5) x 10] for solid manure.

² Value of manure is based on purchase price of an equivalent amount of mineral fertilizer: (N – P₂O₅ – K₂O = 1.43 – 2.20 – 1.10 \$/kg). The actual immediate value for crop production will be less if all the nutrients applied are not required for growing the crop.

The manure value is based on the purchase price of an equivalent amount of mineral fertilizer (Jun 08). The micronutrient and organic matter values are not reflected in these tables.

Table 2b. Solid Manure — Available Nutrients and Value for Manure from Various Livestock Types — Imperial

Animal Type	DM Range	Available Nutrients (in year of application)				Value		Total Nutrient Content (as-is basis)					# Samples
		Aver DM	Usable N ¹	P ₂ O ₅	K ₂ O	Year 1 value ²	Year 2–4 value	Total N	NH ₄ -N	P	K		
		%	lb/ton			\$/ton		%	ppm	%	%	%	
Hog	average	30.2	8.0	8.5	12.1	19.75	9.90	0.90	2,702	0.27	0.46	0.56	61
Dairy	average	25.0	3.6	3.0	10.5	10.60	4.05	0.59	1,221	0.12	0.17	0.49	174
	30% +	38.9	3.1	3.1	11.4	10.90	4.35	0.65	796	0.08	0.17	0.53	36
	18%–30%	21.3	3.7	3.0	10.3	10.60	4.00	0.57	1,331	0.13	0.16	0.48	138
Beef	average	28.4	3.8	4.3	12.2	12.90	5.75	0.74	1,028	0.10	0.24	0.57	184
	30% +	38.1	4.3	6.9	15.9	17.60	8.80	0.95	951	0.10	0.38	0.74	62
	18%–30%	23.5	3.5	3.0	10.4	10.50	4.15	0.63	1,067	0.11	0.16	0.48	122
Sheep	average	33.8	5.9	5.2	16.7	15.95	5.95	0.80	2,299	0.23	0.28	0.78	57
Dairy goats	average	35.2	7.5	5.2	22.2	21.15	6.90	1.07	2,865	0.29	0.28	1.03	41
Composted cattle		38.3	5.8	5.2	23.8	20.80	6.90	0.86	543	0.05	0.28	1.10	29
Compost: all types		38.9	6.3	8.3	17.7	21.20	9.90	0.84	1,035	0.10	0.45	0.82	63
Grain-fed veal	average	28.8	4.4	3.3	10.2	11.30	4.80	0.79	1,328	0.13	0.18	0.47	18
Horses	average	37.4	2.6	2.8	9.3	9.15	3.75	0.50	749	0.07	0.15	0.43	41
	>50%	63.0	1.8	3.9	19.1	14.60	5.50	0.80	591	0.06	0.21	0.89	4
	<50%	34.6	2.6	2.7	8.2	8.50	3.60	0.47	769	0.08	0.15	0.38	37
Poultry	average	55.3	21.1	22.1	26.8	49.20	26.30	2.45	5,339	0.53	1.20	1.24	809
	80% +	85.1	22.7	31.1	37.6	64.65	38.05	3.36	2,129	0.21	1.69	1.74	59
	60%–80%	71.0	23.8	25.9	33.5	58.20	31.50	3.00	4,868	0.49	1.41	1.55	358
	40%–60%	50.0	19.7	22.8	26.8	49.00	26.65	2.25	5,144	0.51	1.24	1.24	146
	18%–40%	28.5	17.7	13.6	14.3	32.25	15.50	1.55	6,976	0.70	0.74	0.66	246
	layers	34.2	21.0	16.3	17.4	38.60	18.80	1.93	7,810	0.78	0.89	0.80	161
	pullets	47.9	27.5	25.0	29.2	57.50	30.36	3.14	7,236	0.72	1.36	1.35	50
	broilers	68.5	23.8	24.5	32.8	56.35	30.30	3.09	4,364	0.44	1.33	1.52	48
	broiler breeder growers	63.6	15.1	26.1	28.3	50.10	29.70	1.92	2,965	0.30	1.42	1.31	24
	broiler breeder layers	65.1	17.1	29.1	33.7	57.00	33.25	2.21	3,175	0.32	1.58	1.56	74
Turkeys		50.6	26.1	25.8	31.3	58.40	30.00	2.74	8,038	0.80	1.40	1.45	61
Biosolids	dewatered	32.1	26.7	24.1	2.4	42.60	31.65	3.76	3,443	0.34	1.31	0.11	89

¹ Useable N = amount of nitrogen available in the year of application assuming spring application incorporated within 24 hr. A simplified useable N for **fall-applied** manure = [(% total N x 0.5) x 20] for solid manure.

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(N – P₂O₅ – K₂O = 0.65 – 1.00 – 0.50 \$/lb). The actual immediate value for crop production will be less if all the nutrients applied are not required for growing the crop.

The manure value is based on the purchase price of an equivalent amount of mineral fertilizer (Jun 2008). The micronutrient and organic matter values are not reflected in these tables.

Table 3a. Other Livestock — Available Nutrients and Value for Manure from Various Livestock Types — Metric

Animal Type		Available Nutrients (in year of application)				Value		Total Nutrient Content (as-is basis)					# Samples
		Aver DM	Usable N ¹	P ₂ O ₅ ²	K ₂ O	Year 1 value ³	Year 2–4 value	Total N	NH ₄ -N		P	K	
		%	kg/tonne			\$/tonne		%	mg/L	%	%	%	
Bison		19.4	0.8	0.8	0.9	3.90	2.60	0.37	315	0.03	0.09	0.08	10
Elk		30.5	1.6	1.8	2.6	9.10	5.70	0.73	620	0.06	0.20	0.24	13
Red deer		25.0	1.3	1.6	2.2	7.70	4.80	0.62	514	0.05	0.17	0.20	6
White-tailed deer		31.1	2.5	4.0	3.8	16.40	11.60	1.27	784	0.08	0.43	0.35	6
Fallow deer		29.4	1.8	3.2	3.8	13.80	9.00	0.87	680	0.07	0.35	0.35	6
Llama		34.9	1.5	3.2	2.7	12.20	8.75	0.75	558	0.06	0.35	0.25	16
Alpaca		27.1	1.6	3.7	2.5	13.20	9.50	0.66	867	0.09	0.40	0.23	11
Wild boar		29.8	2.2	3.0	3.8	14.00	8.30	0.72	623	0.06	0.33	0.35	6
Chinchilla		65.7	5.5	5.7	10.8	32.35	16.20	1.87	3,642	0.36	0.62	1.00	7
Rabbit		45.5	2.8	7.9	6.9	29.00	20.10	1.22	1,281	0.13	0.86	0.64	20
Fox		35.4	8.3	13.9	4.1	47.00	33.75	1.80	4,856	0.49	1.51	0.38	9
Mink	average	50.6	16.4	15.5	7.5	65.75	38.20	2.97	12,465	1.25	1.68	0.70	65
	kittens	70.3	23.5	17.6	9.5	82.70	44.30	4.16	18,363	1.84	1.91	0.88	8
	adults	60.1	22.1	20.0	10.2	86.90	49.50	3.95	17,055	1.71	2.16	0.94	21
	composted carcasses	45.9	9.8	5.8	9.8	18.80	13.00	0.79	1,149	0.11	0.56	0.26	7
	females & kits	41.7	17.5	15.4	7.1	66.60	38.30	3.17	13,262	1.33	1.67	0.66	8
Pheasants		60.6	7.0	6.4	4.2	28.85	18.35	1.93	2,063	0.21	0.70	0.39	9
Partridge		71.9	14.9	11.7	12.3	60.50	34.30	4.01	4,705	0.47	1.27	1.14	8
Quail		59.6	16.9	9.9	11.6	58.70	33.00	4.96	3,384	0.34	1.08	1.07	8
Squab (pigeon)		48.6	8.1	8.7	9.0	40.70	23.40	2.04	3,335	0.33	0.95	0.83	6
Duck		36.3	5.6	2.8	4.0	18.50	7.80	1.10	3,867	0.39	0.30	0.37	8
Ostrich		40.8	1.8	5.0	3.6	17.40	12.40	0.68	633	0.06	0.54	0.33	7
Emu		25.9	3.8	2.7	3.5	15.10	7.70	1.01	2,516	0.25	0.29	0.32	9
Rhea		28.7	3.0	5.0	3.8	19.30	12.50	0.84	1,837	0.18	0.54	0.35	3

¹ Useable N = amount of nitrogen available in the year of application, assuming spring application incorporated within 24 hr. A simplified useable N for **fall-applied** manure = [(% total N x 0.5) x 10] for solid manure.

² Represents half the total phosphorus that is immediately available. The other half is available within a year of application.

³ Value of manure is based on purchase price of an equivalent amount of mineral fertilizer:
(N – P₂O₅ – K₂O = 1.43 – 2.20 – 1.10 \$/kg). The actual immediate value for crop production will be less if all the nutrients applied are not required for growing the crop.

The manure value is based on the purchase price of an equivalent amount of mineral fertilizer (Jun 08). The micronutrient and organic matter values are not reflected in these tables.

Table 3b. Other Livestock — Available Nutrients and Value for Manure from Various Livestock Types — Imperial

Animal Type	Available Nutrients (in year of application)				Value		Total Nutrient Content (as-is basis)					# Samples
	Aver DM	Usable N ¹	P ₂ O ₅ ²	K ₂ O	Year 1 Value ³	Year 2-4 value	Total N	NH ₄ -N		P	K	
	%	lb/ton			\$ /ton		%	ppm	%	%	%	
Bison	19.4	1.6	1.7	1.7	3.55	2.40	0.37	315	0.03	0.09	0.08	10
Elk	30.5	3.1	3.7	5.2	8.30	5.15	0.73	620	0.06	0.20	0.24	13
Red deer	25.0	2.6	3.1	4.3	7.00	4.40	0.62	514	0.05	0.17	0.20	6
White-tailed deer	31.1	5.0	7.9	7.6	14.90	10.55	1.27	784	0.08	0.43	0.35	6
Fallow deer	29.4	3.6	6.4	7.6	12.60	8.20	0.87	680	0.07	0.35	0.35	6
Llama	34.9	3.1	6.4	5.4	11.10	8.00	0.75	558	0.06	0.35	0.25	16
Alpaca	27.1	3.3	7.4	5.0	12.00	8.60	0.66	867	0.09	0.40	0.23	11
Wild boar	29.8	4.4	6.1	7.6	12.70	7.50	0.72	623	0.06	0.33	0.35	6
Chinchilla	65.7	11.1	11.4	21.6	29.40	14.70	1.87	3,642	0.36	0.62	1.00	7
Rabbit	45.5	5.6	15.8	13.8	26.35	18.20	1.22	1,281	0.13	0.86	0.64	20
Fox	35.4	16.6	27.8	8.2	42.70	30.70	1.80	4,856	0.49	1.51	0.38	9
Mink average	50.6	32.8	30.9	15.1	59.80	34.70	2.97	12,465	1.25	1.68	0.70	65
kittens	70.3	47.0	35.1	19.0	75.20	40.30	4.16	18,363	1.84	1.91	0.88	8
adults	60.1	44.2	39.8	20.2	79.00	45.00	3.95	17,055	1.71	2.16	0.94	21
composted carcasses	45.9	6.12	10.3	5.6	17.10	11.80	0.79	1,149	0.11	0.56	0.26	7
females & kits	41.7	34.9	30.7	14.3	60.55	34.80	3.17	13,262	1.33	1.67	0.66	8
Pheasants	60.6	14.1	12.9	8.4	26.20	16.70	1.93	2,063	0.21	0.70	0.39	9
Partridge	71.9	29.7	23.4	24.6	55.00	31.20	4.01	4,705	0.47	1.27	1.14	8
Quail	59.6	33.8	19.8	23.1	53.30	30.00	4.96	3,384	0.34	1.08	1.07	8
Squab (pigeon)	48.6	16.2	17.5	17.9	37.00	21.25	2.04	3,335	0.33	0.95	0.83	6
Duck	36.3	11.2	5.5	8.0	16.80	7.10	1.10	3,867	0.39	0.30	0.37	8
Ostrich	40.8	3.6	9.9	7.1	15.80	11.30	0.68	633	0.06	0.54	0.33	7
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Rhea	28.7	5.9	9.9	7.6	17.60	11.40	0.84	1,837	0.18	0.54	0.35	3

¹ Useable N = amount of nitrogen available in the year of application, assuming spring application incorporated within 24 hr. A simplified useable N for **fall-applied** manure = [(% total N x 0.5) x 20] for solid manure.

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(N - P₂O₅ - K₂O = 0.65 - 1.00 - 0.50 \$/lb). The actual immediate value for crop production will be less if all the nutrients applied are not required for growing the crop.

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